

# Job Title: Magnet High Voltage Engineer IO0913

Requisition ID **5783** - Posted - (France, 13067 St Paul Lez Durance Cedex) - **Construction and Installation - New Posting**

The ITER Organization brings together people from all over the world to be part of a thrilling human adventure in southern France—building the ITER Tokamak. We require the best people in every domain.

We offer challenging full-time assignments in a wide range of areas and encourage applications from candidates with all levels of experience, from recent graduates to experienced professionals. Applications from under-represented ITER Members and from female candidates are strongly encouraged as the ITER Organization supports diversity and gender equality in the workplace.

Our working environment is truly multi-cultural, with 29 different nationalities represented among staff. The ITER Organization Code of Conduct gives guidance in matters of professional ethics to all staff and serves as a reference for the public with regards to the standards of conduct that third parties are entitled to expect when dealing with the ITER Organization.

The south of France is blessed with a very privileged living environment and a mild and sunny climate. The ITER Project is based in Saint Paul-lez-Durance, located between the southern Alps and the Mediterranean Sea—an area offering every conceivable sporting, leisure, and cultural opportunity.

To see why ITER is a great place to work, please look at this video

**Application deadline:** 10/04/2022

**Domain:** Construction

**Department:** Machine Construction

**Division:** Ex-Vessel Delivery & Assembly

**Section:** In-Cryostat, CTS & Auxiliaries

**Job Family:** Construction

**Job Role:** Engineer – 3

**Job Grade:** P3

**Language requirements:** Fluent in English (written & spoken)

**Contract duration:** Up to 5 years

## **Purpose**

As a Magnet High Voltage (HV) Instrumentation Engineer, you will be responsible for the procurement follow-up, testing and onsite assembly of the Magnet system's HV measurement chains components used for the Quench Detection. This includes managing the definition and qualification of assembly procedures and of relevant components, assembly worker training, and HV chains from voltage taps to the electronics. The definition of the HV test strategy, the oversight of HV signal handling, and related control software development up to the magnet system commissioning stage, are also under the scope of this role.

## **Background**

The Magnet System is involved in the Plasma confinement and control and is made of 48 superconducting coils and modules. High Voltage measurement chains are required for the Magnet system protection; the related components have been specifically designed, developed and qualified for the ITER Magnet system. Today these components are in series production for most: this position targets the supervision of the corresponding procurement contracts, the definition and realization of the HV test on Magnets or HV Instrumentation components, the responsibility of the component on-site installation and the responsibility of the quench detection system development and qualification.

This position is assigned to In-Cryostat Instrumentation Group.

## Key Duties, Scope, and Level of Accountability

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- Oversees the Magnet HV measurement chain components procurement contracts and ensure the deliverables are as per requirements;
- Manages the preparation, execution and reporting of the Site Acceptance Test and Assembly HV tests for the magnet system components;
- Defines the HV test strategy to be implemented during the Assembly of these ITER Magnet System components;
- Leads issue analyses and proposes solutions for the Magnet HV measurement chain components;
- During testing phase, identifies, resolves and reports on non-conformities and deviations, then implements and follows-up on corrective actions;
- Defines, organizes and supervises assembly worker training and certification, and supervises the assembly of related components;
- Writes, reviews, manages and maintains technical documentation and records;
- Ensures the production and update of cabling diagrams and 3D routing models; as well as assembly procedures, assembly technical specifications, quality control;
- Issues the functional specifications required for developing and testing the quench detection control software;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- May be required to work outside ITER Organization reference working hours, including nights, week-ends and public holidays

## Measure of Effectiveness

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- Completes contract management activities and ensures fixed project milestones are finalized on time and within the defined costs;
- Provides suitable and achievable solutions to issues/non-conformities/deviations, and ensures these solutions are carried out in accordance with relevant requirements;
- Ensures all the HV tests performed at the reception of the different Magnet System components are in line with relevant procedures/requirements;
- Effectively manages technical documentation and keeps it up to date;
- Supervises the assembly drawings, models and procedures in a timely manner in line with quality requirements and as per the milestones fixed by the project;
- Proactively provides the worker assembly training courses leading to certification;
- Ensures the Magnet High Voltage components are tested and installed within defined timeframe.

## Experience & Profile

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- **Professional Experience:**
  - Minimum 8 years' experience in high voltage electrical engineering for large magnet systems within complex international environments or projects.
- **Education:**
  - Master degree or equivalent in Electrical Engineering field or other relevant discipline;
  - The required education degree may be substituted by extensive professional experience involving similar work responsibilities and/or additional training certificates in relevant domains.
- **Language requirements:**
  - Fluent in English (written and spoken).
- **Technical competencies and demonstrated experience in:**
  - Specialized Domains of Expertise (High Voltage Measurement Techniques): HV measurement chain components design, installation, insulation of large superconducting magnet systems; HV measurement signal handling for Quench detection and protection techniques;
  - Electrical testing of large magnet systems, including defining and performing HV tests;
  - Contract Management and Execution: define needs and requirements, perform sourcing activities, preparation of tenders, and award contracts; monitor and manage all parties to

- ensure delivery and implementation of contractual requirements;
  - Quality assurance and control: knowledge of procedures to verify product compliance and requirements are met;
  - Supervising field technicians, coordinating training and certifications;
  - Using or reviewing CAD tools for electrical drawings and 3D design;
  - Using or reviewing LabView software or Simatic Step7 software would be advantageous.
  - **Behavioral competencies:**
    - Collaborate: Ability to facilitate dialogue with a wide variety of contributors and stakeholders;
    - Communicate Effectively: Ability to adjust communication content and style to deliver messages to work effectively in a multi-cultural environment;
    - Drive results: Ability to persist in the face of challenges to meet deadlines with high standards;
    - Manage Complexity: Ability to analyze multiple and diverse sources of information to understand problems accurately before moving to proposals;
    - Instill trust: Ability to apply high standards of team mindset, trust, excellence, loyalty and integrity.
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***The following important information shall apply to all jobs at ITER Organization:***

- Maintains a strong commitment to the implementation and perpetuation of the ITER Safety Program, ITER Values (Trust; Loyalty; Integrity; Excellence; Team mind set; Diversity and Inclusiveness) and Code of Conduct;
- ITER Core technical competencies of 1) Nuclear Safety, environment, radioprotection and pressured equipment 2) Occupational Health, safety & security 3) Quality assurance processes. Knowledge of these competencies may be acquired through on-board training at basic understanding level for all ITER staff members;
- Implements the technical control of the Protection Important Activities, as well as their propagation to the entire supply chain;
- May be requested to work on beryllium-containing components. In this case, you will be required to follow the established ITER Beryllium Management Program for working safely with beryllium. Training and support will be provided by the ITER Organization;
- May be requested to be part of any of the project/construction teams and to perform other duties in support of the project;
- Informs the IO Director-General, Domain Head, or Department/Office Head of any important and urgent issues that cannot be handled by line management and that may jeopardize the achievement of the Project's objectives.